



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,706	01/27/2004	Wang Long Zhou	16188	3824

43309 7590 02/22/2007  
SILLS CUMMIS EPSTEIN & GROSS P.C.  
ONE RIVERFRONT PLAZA  
IP DEPARTMENT  
NEWARK, NJ 07102

EXAMINER
----------

NGUYEN, DUNG T

ART UNIT	PAPER NUMBER
----------	--------------

2828

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/766,706

Applicant(s)

ZHOU, WANG LONG

Examiner

Dung (Michael) T. Nguyen

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6, 8, 10-20 and 26-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration..
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8, 10-20, and 26-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**OFFICE ACTION**

***Response to Arguments***

Applicant's arguments with respect to claims 1-6, 8, 10-20, and 26-30 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-5, 8, 10-12, 15-18, 26-29 are rejected under 35 U.S.C. 102(a) as being anticipated by Xiong (WO03/007438).

With respect to claims 1-2, 4-5, 8, 11-12, 16-18, 26-29, Fig.2 shows a laser device having a laser medium in a resonator cavity comprising:

a) means 12 for pumping energy into said laser medium 11 to increase gain of said laser device;

b) active Q-switch means 15 (EO crystal) having open and close states (pages 3-6) for controlling loss modulation of said resonator cavity; and

c) passive Q-switch means 16 (absorber Cr4:YAG) for further controlling loss modulation of said resonator cavity, wherein loss modulation control from active and passive Q-switch means enable generation of a short width, high peak power pulse at a lasing wavelength (page 11, lines 14-20).

With respect to claim 3, page 10, line 5 discloses the pulse width of 4.2ns.

With respect to claim 10, page 7, lines 24-31 discloses the laser material Nd:YVO4.

With respect to claim 15, page 7, lines 19-31 discloses said integrated solid-state laser material and said solid-state saturable absorber comprise a YAG crystal co-doped with Nd<sup>3+</sup> and Cr<sup>4+</sup>.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6, 19-20, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xiong (WO03/007438) in view of Wiechmann et al. (6009110). Xiong disclose all limitations of the claims except for the means for triggering the active Q-switch.

Wiechmann et al. teach the means 50 for triggering the active Q-switch in Fig. 1.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Xiong what is taught by Wiechmann in order to control the open state and close state of the active q-switch.

Art Unit: 2828

Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xiong (WO03/007438) in view of Neev et al. (2003/0039274). Xiong disclose all limitations of the claims except for said solid-state laser material and said solid-state saturable absorber is physically bonded/integrated together.

Neev et al. teach the solid-state laser material and the solid-state saturable absorber is physically bonded/integrated together (para.0080).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Xiong what is taught by Neev et al. to have a compact structure as a microcavity laser.

### Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung (Michael) T Nguyen whose telephone number is (571) 272-1949. The examiner can normally be reached on 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Dung h

Michael Dung Nguyen

2/12/07